ABSTRACT OF THE DISCLOSURE

Systems and methods where a lighting configuration of a vision system is determined using a controllable lighting system and at least one image evaluation tool. The lighting configuration is usable to obtain a desired inspection image of at least one feature of a workpiece Base images are obtained using actual illumination settings of the controllable lighting system. Simulated or synthetic sets image results are generated, based on base images and synthetic lighting configurations. The synthetic lighting configurations include at least one illumination setting which is different from the actual illumination settings used to obtain one or more component base images. A best actual or synthetic lighting configuration is chosen based on the best corresponding set of image results.

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